

# Perinatal Care Matters

A Publication of the Regional Perinatal Programs of California

Fall, 2005

## **Infant Abduction Prevention and Critical Incident Response**

REGION 1 North Coast Perinatal Access System 415/ 478-3868

REGION 2 Northern California Perinatal Outreach Program 916/733-1750

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REGION 6.3-6.6 PAC/LAC 818/ 788-6850

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REGION 8 Orange County Regional Perinatal Program 714/ 456-6706

REGION 9 San Diego/Imperial Counties Regional Perinatal System 858/536-5090

REGION 10 Northern Kaiser Permanente Regional Perinatal Program 510/ 987-3430

REGION 11 Southern Kaiser Permanente Regional Perinatal Program 626/405-6052 Infant abduction (kidnapping of infants from birth to six months of age by non-family members) from healthcare facilities has become an increasingly rare event. It has been 17 months since Nurses Aide Tania Shelton abducted newborn Graci Barrows from her mother's room in Fort Logan Hospital in Stanford, Kentucky on April 2, 2004. Fortunately Graci was found six hours later, abandoned but unharmed, in an alley in Bowling Green, Kentucky, 125 miles from the site of her abduction. Although Graci was physically unharmed, life will never be quite the same for her family or for the staff of Fort Logan Hospital.

There has been a dramatic decrease in the number of infant abductions since the Federal Bureau of Investigation and National Center for Missing and Exploited Children (NCMEC) began compiling statistics. However that does not mean that healthcare facilities can decrease their diligence as every long stretch without an infant abduction has eventually ended - some tragically. For example, a 19-month hiatus in abductions ended in May, 2000 with the death Zyguan Wakefield after he was abducted from the Intermediate Care Nursery of Loyola University Hospital in Chicago. There were four other infant abductions from healthcare facilities that year. Infant abductions by non-custodial family members and abductions from homes and other places with violence to the mother also continue to occur with alarming frequency.

#### **Protective Measures**

There a number of proactive measures healthcare facilities can implement to prevent infant abductions of all types. These measures include:

- → Develop a comprehensive, practical multidisciplinary infant abduction prevention plan;
- → Develop and practice facility wide Critical Incident Response Plans for Infant Abductions (CIRP-IA);
- ◆Institute a Quality Improvement (QI) program to test the effectiveness of the components of the plan and identify opportunities for improvement; and
- **→** Identifying internal and external experts/resources.

The four essential components of a comprehensive plan are 1) written policies and procedures, 2) a staff development plan, 3) a patient/family education plan and 4) a technology plan. It is important that key individuals from a variety of disciplines (nursing, physicians, prenatal education, QI, security, public affairs, risk management, human resources, social services, and hospital administrators) participate in the development and implementation of these plans. Each discipline brings a unique perspective to the table

and commitment from each is important for program support, funding and successful, sustained implementation.

#### **Policies and Procedures**

Written policies and procedures addressing infant identification (photographs and footprints), infant transport, staff identification, management of infants on police or protective service hold and critical incident response need to be consistently implemented. A unique type of staff identification for all staff who have the authority to remove an infant from the mother's room or nursery is essential. Visits by non-custodial parents must be directly and constantly supervised by hospital staff. If an infant tagging system is used, all alarms must be responded to immediately and not cleared until all infants have been located.

#### **Staff Development**

The staff development plan needs to include general information on infant abduction prevention including: a typical abductor profile, as well as individual roles in the facility's CIRP-IA for all hospital staff including physicians. All members of the Maternal Child Health (MCH) staff and ancillary staff who work on all MCH Units [Labor and Delivery (L&D), Family Centered Care, NICU and Pediatrics] should receive specific detailed education during orientation and annually thereafter. Temporary staff must be informed about infant security measures and their role in implementing them.

#### **Parent and Family Education**

A parent and family education plan should include prenatal classes with general information on the facility's infant security measures. More detailed information should be provided in L&D at the time of admission and repeated at the beginning of each shift by the nurse responsible by the care of the mother and infant. This information must include the type of unique identification worn by staff with the authority to remove the infant from the mother's room and how to respond if this identification is not present. Discharge instructions should reinforce the concept that infant security begins in the hospital, but continues at home and in all public places. It should also include warnings regarding the inadvisability of public announcements of the birth including newspaper announcements and outdoor home decorations.

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#### **Technology Plan**

The technology plan needs to be developed with input from security professionals and safety experts who participate actively in implementation and monitoring. It should include access and egress control, closed circuit video surveillance with appropriate signage announcing it, and communication systems for CIRP-IA. The technology plan may also include an electronic tagging system. If such a system is utilized, it must be tested on a regular basis to ensure proper functioning and alarms must be able to be heard by staff. It should be emphasized that electronic tagging systems are an adjunct to the CIRP-IA and are not a substitute for a diligent MCH staff with a high index of suspicion and well educated parents and families. Infants have been abducted from facilities where electronic tagging systems were installed but not properly maintained or utilized by staff.

The facility's CIRP-IA can be modeled after the facilities Internal/External Disaster Plan to take advantage of already established processes and resources and decrease the education required. It should include social service staff (for the victim family), employee assistance (for the staff that are vulnerable for post traumatic delayed stress) and public relations. It should be developed in close collaboration with local law enforcement. The plan should be tested with a hospital wide drill conducted at least annually. This drill should be carefully planned and monitored to ensure patient and staff safety and to identify opportunities for improvement. These opportunities should be documented, reported in the appropriate hospital committee, and followed until resolved. As part of the overall CIRP-IA, all staff members should be encouraged to report actual "near misses" so that they can be debriefed and system problems identified and corrected.

#### Conclusion

Though infant abductions do not occur frequently, they do occur and will continue to occur as long as there are women who are so desperate for an infant that they are will to abduct another mother's child. Whether it is perpetrated by a non-family member or a non-custodial family member, the result can be devastating for the family, staff, and the healthcare facility's reputation in the community. There may also be legal and regulatory consequences. Therefore it is crucial that efforts to prevent abductions or to respond appropriately should one occur, be undertaken by all facilities where infants are delivered or where they receive care.

For Healthcare Professionals: Guidelines on Prevention of and Response to Infant Abductions, 8<sup>th</sup> Edition, 2005 from NCMEC presents concepts and "guidelines" in an 80 page booklet, including strategies, protocols, and a comprehensive unit assessment tool that support and enhance the security standards promulgated by the Joint Commission on Accreditation of Healthcare Organizations. A complimentary copy and technical assistance can be obtained by calling 1-800-The-Lost (1-800-843-5678) or www.missingkids.com.

By: Judy C. Collier, RNC, MSN, Kaiser Permanente Southern California, RPPC Region 11

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# BIRTH CERTIFICATES MATTER SAFE SURRENDER & VOLUNTARY RELINQUISHMENT

#### Registering the Birth

The decision to 'give up a baby' is not an easy one. Birth parents spend many agonizing hours weighing the pros and cons; all with the intent of making the best decision for their child. Most often a decision to voluntarily relinquish a baby is made during pregnancy and plans are set in motion for adoption. Infrequently, a decision is made after birth either while the mother is still in the hospital and/or after discharge home. At that time, the mother can choose: 1) voluntary relinquishment, 2) to safely surrender the baby or 3) to unsafely abandon the baby. Parents may also leave their baby in a safe place, such as a hospital, without declaring voluntary relinquishment or safe surrender. The first two options are the safest for the baby.

It is important that while the mother is still in the hospital she is given adequate information about the options available to her. Medical staff must understand the subtle differences between the options and to be able to provide the necessary guidance for the mother and/or parents to make the best and safest choice for the child. While the Safely Surrender Baby (SSB) law does not specifically address hospital births, current State policy does allow for the safe surrender of babies born in hospitals when the parent specifically requests the SSB law be applied. For a woman to opt in favor of this law once she has given birth inside the hospital, she (and not anyone else) must invoke the law and at a minimum be able to describe the general concept of the law. She must also give physical custody of the baby to personnel on duty. In these cases, while the identity of the mother is known, the correct form for the birth clerk to complete is the Certificate of Finding an Unknown Child (VS 136), which is processed, numbered, and filed in the same manner as a regular birth certificate. Hospital staff must offer the mother the opportunity to complete a medical questionnaire, however no personal identifiers of the mother are placed in the child's records.

## **Voluntary Relinquishment**

For those women and/or parents who simply state that they are unable or unwilling to care for the infant, the preferred option continues to be voluntary relinquishment for adoption and a social worker should assist the family in making the best plan. In these cases, the birth is registered in the usual manner (file a Birth Certificate). While voluntary relinquishment requires counseling and at a minimum two visits with a social worker it provides more opportunities for both the parents and the baby. A parent may designate an adoptive family or specify the child be placed with an adoptive family of a specific religion and other preferences. Relinquishment provides a level of confidentiality for the birth parent as only non-identifying information is given to the adoptive family. However, unlike SSB, relinquishment does allow for contact at the time the child reaches the age of majority if the birth parent and adoptee have signed waivers on file. Hospital social work staff should work in consultation with Child Welfare agencies in their county to support the process.

If you have questions regarding the public awareness and outreach materials for the SSB law or to order materials, please contact the Office of Child Abuse Prevention at (916) 445-2771. Other questions regarding the SSB law should be directed to the Child Welfare Policy and Program Bureau at (916) 445-2890. By: Ellen Silver, RNP, MSN and Naftali Sampson, MSW

#### **Newborn Screening in California**

One in 3,000 babies in California will be born with a treatable metabolic disorder, if it is detected in time.

Newborn screening in California is expected to save more than \$100,000,000 annually.

As reported in the summer edition of *Perinatal Care Matters*, the California Newborn Screening Program (NBS) has recently expanded to include testing for 75 genetic disorders, including congenital adrenal hyperplasia and multiple additional metabolic disorders detectable via tandem mass spectrometry. Other changes in the expansion include: a new web based computer system, new specimen collection forms, newly revised educational materials for health care providers and parents, and a change in the retesting procedure for newborns that do not have an adequate pre-transfusion specimen.

## **Provider Responsibilities**

This is an excellent opportunity time for providers to renew attention to specimen quality, completion of forms and timeliness of specimen collection.

- +All personnel involved with screening should review collection techniques to ensure the adequacy of samples. The two most common reasons that specimens cannot be run are due to uneven saturation and layering of blood. All inadequate specimens must be redrawn, requiring extra time that may mean a potentially serious disorder may remain undiagnosed and untreated.
- +When filling out the specimen collection form remember that completeness, legibility and accuracy are crucial. All the information entered on the form must be complete. No items should be left blank. Missing information may delay transmission of results to the baby's family and doctor, precious time lost that could lead to delayed in treatment.
- ✦Legibility can make the difference between information that can be entered into the state computer incorrectly or not at all. The form should be treated as a medical record. Check all information for accuracy, and when necessary, verify phone numbers and addresses with the baby's mother. Also, make sure that the information is written in the correct place on the form.
- → These factors also influence the facility's performance as reported on the HEPP report comparing the performance of all the hospital in the state.

#### Time is of the Essence

Timeliness is key in the newborn screening process to avoid delays in treatment that can result in pediatric morbidity and mortality. State mandates regarding timing of the screen, chart review and screening on babies prior to discharge or blood transfused can be found on the NBS website at <a href="https://www.dhs.ca.gov/gdb">www.dhs.ca.gov/gdb</a>. For more information about newborn screening visit marchofdimes.com or go to dhs.ca.gov/gdb and click on "Newborn Screening" to find more detailed information on the disorders added and other changes. Fact sheets and educational materials for most of the conditions can be requested from the NBS Area Service Center in your area...

Submitted by: NBS Area Service Center at Harbor-UCLA Medical Center, (310) 222-3751.

#### Public Policy & California Legislation 2005-1006

AB794, as amended, Chu. Health care funding: aliens: Access for Infants and Mothers Program. Chaptered 6/30/05. Chapter 23. Statutes of 2005. Provides that the department may accept or use federal moneys allocated to the state under SCHIP to fund medically necessary pregnancy-related services provided to aliens under the Medi-Cal program.

AB 772, Chan California Healthy Kids Insurance Program. Enrolled. Forward to Governor on 9/15/05. Requires MRMIB and DHS to operate CHKIP in a coordinated and seamless manner with respect to children who are enrolled in, or potential enrollees of, Healthy Families (HFP) and Medi-Cal. Expands HFP eligibility incomes up to 300% of the federal poverty level.

**AB 1278, as amended, Emmerson. Vital records.** Enrolled. To Governor on 9/9/05 This bill would revise the medical and social information to be included on a certificate of live birth.

AB 291, as amended, Koretz. Postpartum mood and anxiety disorders: screening. Hearing canceled on request of Author

AB 525, amended, Chu, Health Care. Suspense File 5/25/05

AB 972, as amended, Sharon Runner. Boxing: pregnancy tests. Failed Asm Jud 4/26/05

**SB116, amended, Dutton**. **Child Abandonment: newborns.** Enrolled. Forward to Governor 9/7/05. Deletes the 2006 "Sunset Date"making "Safe Surrender" permanent.

**SB 377, Ortiz Medi-Cal:dental services.** Enrolled. Forward to Governor on 9/15/05. This bill would declare that the Legislature has appropriated money in the Budget Act of 2001 and each subsequent budget thereafter, for provision under the Medi-Cal program of nonemergency benefits for the prevention and treatment of dental and periodontal disease during pregnancy to prevent preterm delivery and low-birth weight.

**SB 869, as amended, Bowen.** Enrolled. Forward to Governor on 9/13/05. This bill establishes the Nurse-Family Partnership program, administered and implemented by the Department of Health Services, for purposes of making grants to eligible participating counties for the provision of voluntary registered nurse home visiting services for expectant first-time low-income mothers, their children, and their families.

**SB 840, amended, Kuehl.** Single-payer health care coverage. Pass Senate Committees to Assembly. Re-referred to Asm Rules. Creates the California Health Insurance (CHI)System, a single payer health care system, administered by the CHI Agency, to provide health coverage to all California residents.

SB 456, as amended, Runner. Access for Infants and Mothers (AIM): federal funding. Author canceled hearing.

SB 147, as amended, Runner. Fetal pain prevention. Hearing canceled author's request

**SB739**, as amended, Speier. Hospitals: Infection Control. Inactive file at the request of Assemblymember Wolk.

#### REDUCING UNNECESSARY SUPPPLEMENTATION IN THE BREASTFED INFANT

Exclusive breastfeeding has been shown to provide improved protection against many diseases and to increase the likelihood of continued breastfeeding for at least the first year of life. Although breastfeeding initiation rates have increased steadily since 1990, exclusive breastfeeding rates have shown no increase. Despite past and current American Academy of Pediatrics recommendations for exclusive breastfeeding for approximately the first 6 months of life data from the newborn screening database reveal that approximately 50% of breastfed infants are leaving California hospitals already being supplemented with formula. (Figure 1).

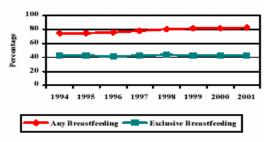


Figure 1: Percent Any and Exclusive in-Hospital Breastfeeding in California 1994-2001. Source: Newborn Screening Database, Genetics Disease Branch, California DHHS

#### **Consequences of Inappropriate Supplementation**

Supplementation has been found repeatedly to be one of the strongest factors associated with early breastfeeding termination. Although some supplementation is medically necessary, most is not. Inappropriate supplementation caries significant consequences including alteration of gut flora toward more pathogenic bacteria, potential sensitization to foreign proteins (especially in allergic families), infant preference for the nipple over the breast interference with the normal frequency of feedings, misleading message to parents leading to continued supplementation at home, and most importantly, a shortened duration of exclusive and any breastfeeding.

#### **Inappropriate Reasons for Supplementation**

With the best of intentions, post partum nurses sometimes suggest artificial milk supplementation as a means to achieve more maternal rest in the hospital. Unfortunately, research suggests that supplementation in the nursery does not increase the quantity or quality of a mother's sleep. Supplementation is also suggested to <a href="mailto:prevent\_weight">prevent\_weight</a> loss or dehydration. Infants are well hydrated via the placenta at birth with urine output greatly exceeding intake for the first three days of life. Small colostrum feedings (five to 15 ml) are appropriate for the size of the infant's stomach, sufficient to prevent hypoglycemia in normal term infants, and easy to manage as the infant learns to coordinate suck, swallow and breathing. In optimally breastfed infants the maximal weight loss averages six percent of birth weight and occurs between day two and three of life.

Additional reasons given for supplementation in the hospital are to prevent hypoglycemia and jaundice. As noted above, healthy term infants do not be become hypoglycemic simply from underfeeding. Supplementation may actually blunt an infant's normal adaptive response to transient hypoglycemia. The risk of early hyperbilirubinemia is inversely proportional to the number of breastfeedings. There is no need to start supplementation in the hospital in order to teach a baby to take a bottle for when mom returns to work; there is ample time for that after breastfeeding is well established.

Supplementation can also be used inappropriately for both the "sleepy" baby and the "fussy" baby. Sleepy babies require attention to very early feeding cues, and not every fussy baby is hungry. Many infants just want to be skin-to skin with mom! Using supplementation as a way to prevent sore nipples is not supported in the literature, as unlimited suckling time improves breastfeeding rates postpartum without increasing sore nipples.

#### What to Supplement

Ideally, the volume of supplementation should mimic the normal volume of colostrum and transitional milk after Lactogenesis II. Feeding five to 15 ml per feeding days one and two, and 10-45 ml per feeding day three and beyond is appropriate for a full term or near term infant. Occasionally infants will need or want more, but a common reason for NICU evaluation is excessive feeding of 45-60 ml of supplement per feeding in the first 24 hrs with resultant emesis.

If available, expressed mother's own milk should be used to supplement her infant. Hand expression can often elicit more usable milk than using a breast pump before Lactogenesis II. Pasteurized donor human milk would be the next choice so as to prevent exposure to whole cow's milk proteins, especially in allergy-prone families. If pasteurized donor milk is not available, my next choice would be elemental or hypoallergenic formulas, also to reduce exposure to cow's milk proteins and to reduce exposure to cow's milk proteins and to reduce bilirubin faster. They also offer the psychological advantage of being "different"; a special treatment to be discontinued once full breastfeeding is achieved. Last on the list are regular formulas. Soy formulas are no less allergenic than regular formulas and should not be used without a medical indication (e.g. galactosemia). Glucose water is inadequate nutrition; although "stretching" expressed human milk by combining it with ten percent glucose water (D<sub>10</sub>W) may be appropriate for one to two feeds.

#### **How to Supplement**

How to supplement a breastfed infant is more of a political, than a medical, controversy. The goal of any alternative (to the breast) feeding method is to establish or restore full direct breastfeeding eventually. The main advantage of supplementing without the ubiquitous bottle is to give the non-verbal message to the parents that whatever method used is temporary. Also, some infants learn to prefer the immediate, faster flow through a bottle nipple and have difficulty returning to the breast.

In most of the world cup feeding is the method of choice for supplementation, but infants are amazingly adaptable to any chosen method. Multiple studies have demonstrated cup feeding is safe, but so far, only two have shown some benefit in extending breastfeeding duration. It appears that the more supplementation with a bottle (two to three feeds), the less likely the infant will be to establish full breastfeeding.

Finger feeding, syringe feeding, spoon feeding, etc. all appear safe, but there is no evidence as to efficacy in improving breastfeeding duration. Using a supplemental nursing system or feeding tube <u>at the breast</u> seems to be an ideal way to provide supplementation, but is sometimes awkward for the mother and lacks any research as to long term breastfeeding success.

#### **Conclusions**

There are many reasons infants are given supplements, most of them spurious. When supplementation is truly needed, it should be provided in a way to minimize the risk to future exclusive breastfeeding. The goals of supplementation are to provide needed nutrition and hydration, avoid feeding-related morbidities, and to establish and maintain a other's milk supply. Anticipatory guidance regarding the normal course of lactation and education of health care providers can reduce the need for supplementation. When supplementation is requested without medical indication, health care providers have responsibility to inform mothers of the possible consequences.

Reproduced from the San Diego Breastfeeding Coalition Newsletter, with permission. Written by: Nancy Wight, MD, IBCLC, Region 9

For full references please visit our website at www.perinatal.org

Reducing Unnecessary Supplementation in Breastfeeding References

- American Academy of Pediatrics, Section on Breastfeeding, Breastfeeding and the Use of Human Milk. Pediatrics 2005; 115(2): 496-506
- Ryan AS, Wenjun Z, Acosta A. Breastfeeding Continues to Increase Into the New Millennium. Pediatrics 2002; 110(6): 1103-1109
- Hall RT, Mercer AM, Teaslet SL et al. A breast feeding assessment score to evaluate the risk of cessation of breast-feeding by 7 to 10 days of age. J Pediatr 2002; 141; 659-664
- Howard CR, Howard FM, Lanphear B et al. Randomized Clinical Trial of Pacifier Use and Bottle-Feeding or Cup feeding and Their Effect on Breastfeeding. Pediatrics 2003; 111(3):511-518
- DiGirolamo AM, Crummer-Strawn LM, Fein S. Maternity Care Practices: Implications for Breastfeeding. Birth, June 2001; 28(2):94
- Dramer MS, Chalmers B, Hodnett ED et al. Promotion of Breastfeeding Intervention Trial (PROBIT); a randomized trial in the Republic of Belarus. JAMA 2001 Jan 24-31; 285(4):413-20
- Rubaltelli FF, Bladaloli R, Pecile P, Nicolitti P. Intestinal flora in breast and bottle-fed infants. J Perinat Med. 1998;26(3):186-91
- Saarinen UM, Kajosaari M. Breastfeding as prophylaxis against a topic disease: prospective follow-up study unti 17 years old. Lancet. 1995 Oct 21; 346(8982):1065-9
- Davis HV, Sears RR, Miller HC & Brodbeck AJ. Effects of Cup, Bottle and Breast Feeding on Oral Activities of Newborn Infants. Pediatrics 1948; 2:549-558
- Van Den Driessche M, Peelers K, Marien P, Ghoos Y, Devlieger H, Veereman-Wauters G. Gastric emptying in formula-fed and breastfed infants measured with the 13C-octanoic acid breath test. J Pediatr Gastroenterol Nutr. 1999; 29(1):46-51
- Keefe MR. The impact of infant rooming-in on maternal sleep at night. J Obstet Gynecol Neonatal Nurse. 1988 Mar-Apr; 17(2):122-6
- Scammon RE, Doyle LO. Observations on the capacity of the stomach in the first ten days of postnatal Life. Am J Dis Child 1920; 20616-538
- Williams, Anthony F. Hypoglycamia of the Newborn: Review of the Literature, World Health Organization, Geneva, 1997; 56 pages (Download from: www.who.int/shd/pub/,co/bf/hypoglyc/hypoclyc.htm)
- Marchini G, Stock S. Thirst and vasopressin secretion counteract dehydration in newborn infants. J Pediatr 1997 May; 130(5):736-9
- Rodriguez G, Ventura P, Samper MP, Moreno L, Samia A, Perez-Gonzalez JM. Changes in body composition during the initial hours of life in breast-fed healthy term newborns. Biol Neonate 200; 77(1):12-6
- Macdonald PD, Ross SR, Grant L. Young D. Neonatal weight loss in breast and formula fed infants. Arch Dis Child Fetal Neonatal Ed 2003 Nov; 88(6):F472-6
- Comblath Comblath M, Hawdon JM, Williams AF, Aynsley-Green A, Ward-Platt MP, Schwartz R, Kalhan SC. Controversies regarding definition of neonatal hypoglycemia: suggested operational thresholds. Pediatrics 200 May; 105(5):1141-5
- Yamauchi Y, Yamanouchi I. Breast-feeding frequency during the first 24 hours after birth in full-term neonates. Pediatrics. 1990 Aug; 86(2):171-5
- 19. Staven S, Harvey D. Unlimited suckling time improves breast feeding. Lancet 1981 Feb 14; 1(8216):392-3
- Academy of Breastfeeding Medicine. ABM Clinical Protocol Number 3-Hospital Guidelines for the Use of Supplementary Feedings in the Healthy Term Breastfed Neonate, 2002 <a href="https://www.bfmed.org/proto3.html">www.bfmed.org/proto3.html</a>
- WHOA/UNICEF. Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services, A Joint WHO/UMICEF Statement. World Health Organization, Geneva, 1989

- Powers NG, Slusser W. Breastfeeding Update. 2: Clinical lactation management. Pediatrics in Review. May 1997, 18(5)(5): 147-179
- 23. Gourley GR. Breastfeeding, Diet, and Neonatal Hyperbilirubinemia. NeoReviews. Feb 2000; 1(2):e25-30
- Marinelli KA, Burke GS, Dodd VL. A Comparison of the Safety of Cupfeedings and Bottlefeedings in Premature Infants Whose Mothers Intend to Breastfeed. J Pernatol 2001; 21(6):350-355
- Howard CR, de Blieck EA, ten Hoopen CB, Howard FM, Lanphear BP, Lawrence RA. Physiologic stability of infants during cup and bottle feeding. Pediatrics 1999; 104(5 Pt 2):1204-1207
- Malhotra N, Vishwambaran L, Sundaram DR, Narayanan I. A controlled trial of alternative methods of oral feeding in neonates. Early Hum Dev. 199; 54;29-38
- Schubiger G, Schwarz U, Tonz O. UNICEF/WHO Baby-Friendly Hospital Initiative; does the use of bottles and pacifiers in the neonatal nursery prevent successful breastfeeding? Neonatal Study Group. Eur J Pediatr 1997; 156:874-877
- Lang S. Lawrence CJ, Orme RL. Cup-feeding; an alternative method of infant feeding. Arch Dis Child 1994; 71:365-369
- Collins CT, Ryan P, Crowther C et al. Effect of bottles, cups, and dummies on breast feeding in preterm infants: a RCT. BMJ, doi:101136/bmj.38131.675914.55 (published 18 June 2004)

# IN VITRO FERTILIZATION TWINS MORE LIKELY TO BE BORN PRETERM

Twins conceived by in vitro fertilization (IVF) are more likely than spontaneously conceived twins to be born preterm and to be delivered by cesarean, according to a meta-analysis of 11 case-control studies.

Researchers reported in the July, 2005 American Journal of Obstetrics and Gynecology that IVF twins were 50% more likely than spontaneously conceived twins to be born preterm, but there were no differences in the likelihood of being small for gestational age or having low birth weight. IVF twins were also twice as likely to be admitted to the intensive care unit and 33% more likely to have cesarean delivery than were spontaneously conceived twins.

In recent years, IVF has led to an increase in the number of preterm births and low birth weight infants, but the mothers of these infants typically are older and at higher risk of both outcomes. To identify the independent risk of IVF, researchers compared the incidence of adverse obstetric outcomes in pooled data on 2303 IVF twins and 2326 spontaneously conceived twins who were matched for maternal age. The two groups of twins did not differ in the rates of stillbirth, very low birth weight, or major complications of delivery, and there was no difference in the rate of congenital malformations.

IVF twins have worse perinatal outcomes than spontaneously conceived twins who are matched for maternal age, despite the fact that their outcomes should be better because of the decreased proportion of monochorionic twins and the likely decreased rate of smoking and higher socioeconomic status among the mothers

Possible reasons for the increase in preterm birth "include a factor inherent to the IVF technology, a history of infertility itself, or physician or patient anxiety," according to the investigators.